

Proposed Amendment And Response Under 37 C.F.R. §1.116
Serial No. 09/345,195

REMARKS

Claims 1-5, 7-18 and 23-31 are pending in the present application. Applicants respectfully request reconsideration of the present claims in view of the foregoing amendment and the following remarks.

I. Prior Art Rejections:

Claim Rejections Under 35 U.S.C. §103(a)

Rejection of Claims 1-2, 7-15, 18, 23-24, and 26 Under 35 U.S.C. §103(a) in View of Sun

Claims 1-2, 7-15, 18, 23-24, and 26 are rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 5,802,482 to Sun (hereinafter "Sun"). This rejection is respectfully traversed for at least the reasons given in Applicants' Amendment and Response filed on September 2, 2003 in response to the May 2, 2003 Office Action.

Rejection of Claims 16-17 Under 35 U.S.C. §103(a) in View of Sun and Hetherington

Claims 16-17 are rejected under 35 U.S.C. §103(a) as being unpatentable over Sun in view of U.S. Patent No. 6,411,948 to Hetherington et al. (hereinafter "Hetherington"). This rejection is respectfully traversed for at least the reasons given in Applicants' Amendment and Response filed on September 2, 2003 in response to the May 2, 2003 Office Action.

Rejection of Claims 3-5, 25 and 27-31 Under 35 U.S.C. §103(a) in View of Sun and Hetherington2

Claims 3-5, 25 and 27-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sun in view of U.S. Patent No. 6,272,495 to Hetherington (hereinafter "Hetherington2"). This rejection is respectfully traversed for at least the reasons given in Applicants' Amendment and Response filed on September 2, 2003 in response to the May 2, 2003 Office Action.

Proposed Amendment And Response Under 37 C.F.R. §1.116
Serial No. 09/345,195

Arguments

In addition to Sun failing to teach Applicants' claimed method, computer-readable medium capable of performing the method, and system comprising a computer program module for performing the method as described in Applicants' Amendment and Response filed on September 2, 2003, Applicants respectfully submit that Sun does not teach, suggest, or describe the following claim features: (1) determining whether the first character may begin a valid sequence of characters for forming a complex character *according to the rules associated with the selected language* (claim 1); (2) displaying the first character to a user on a display screen prior to receiving any additional characters indicating to the user that the first character may begin a valid sequence of characters for forming a complex character *according to rules associated with the selected language* (claim 1); (3) appending the character to the previous character to form a correctly configured sequence of characters *according to the rules associated with the selected language* (claim 14); (4) determining whether the character may be appended to a previous character to form a sequence of characters *according to rules associated with forming a complex character of the selected language* (claim 14); (5) displaying the correctly configured sequence of characters on a display screen for viewing by a user prior to receiving any additional characters indicating to the user that the correctly configured sequence of characters is at least a portion of a valid sequence of characters for forming a complex character *according to rules associated with the selected language* (claim 14); (6) if the character may not be appended to the previous character *according to the rules associated with forming a complex character of the selected language*, prohibiting appending the character to the previous character (claim 14); (7) determining whether the sequence of characters is a complete sequence forming a complex character *in accordance with the rules associated with the selected language* (claim 15); (8) if the sequence of characters is a complete sequence of characters forming a complex character *according to the rules associated with the selected language*, prohibiting appending additional characters to the sequence of characters (claim 15); (9) if the character is associated with the selected language, determining whether the character may be displayed as a single character *according to the rules of the selected language* (claim 16); (10) if the character may not be

Proposed Amendment And Response Under 37 C.F.R. §1.116
Serial No. 09/345,195

displayed as a single character *according to the rules of the selected language*, determining whether the character may be appended to one or more additional characters to form a valid sequence of characters for forming at least a portion of a complex character *according to the rules of the selected language* (claim 16); (11) if the character may be appended to one or more additional characters to form a valid sequence of characters for forming at least a portion of a complex character, displaying the character on a display screen for viewing by a user prior to receiving any additional characters indicating to the user that the character is at least a portion of a valid sequence of characters for forming a complex character *according to rules associated with the selected language* (claim 16); (12) determining a maximum number of characters that may comprise a valid sequence of characters *according to the rules of a selected language* (claim 17); (13) if one of the subsequent combinations of characters is valid as a complete sequence of characters comprising a complex character *according to the rules of the selected language*, then returning a context for the one subsequent combination as the context for a complex character (claim 17); (14) to determine whether the first character may be the first character of a sequence of characters for forming at least a portion of a complex character *according to the rules associated with the selected language* (claim 18); and (15) to determine whether the second character may be appended sequentially to the first character *according to the rules associated with forming at least a portion of a complex character the selected language* (claim 18).

The term "rules" as recited in the claims above is directed toward syntactical language rules. Page 9 of the present application states that

The present invention is directed to checking whether a simple character initially may be input or may be appended to a previously input simple character or sequence of simple characters to form a sequence of simple characters that is valid according to the *syntactical rules* of the language to which the characters belong. . . . For the sake of simplicity, for the remainder of this document, *the syntactical rules for a given language which are followed to determine the validity of a single character or sequence of characters will be referred to as "rules."* (emphasis added).

In contrast, Sun does not teach, suggest, or describe method, computer-readable medium capable of performing the method, and system comprising a computer program module

Proposed Amendment And Response Under 37 C.F.R. §1.116
Serial No. 09/345,195

for performing the method of character sequence checking according to the syntactical rules for a given language. In fact, Sun teaches away from using syntactical rules in forming complex characters. Sun discloses in column 3, lines 24-32:

In other words, input processor 106 does not have any knowledge about the syntax or grammar of the operating language. It merely generates data structures based upon the validity of the input data with respect to combining rules 108. Meaningless data structures can therefore be generated if the input data are in the wrong context (e.g., wrong sequence). The operation of the input processor 106 is analogous to the generation of English words without a spell checker. (Emphasis added.)

In response to Applicants' argument that Sun teaches away from the invention in that Sun allows meaningless data structures to be generated, Examiner Singh states on page 8, lines 17-22 of the November 22, 2003 Office Action:

Sun discloses that a signal error is generated for a character that produces an invalid sequence. Moreover, Sun's system is based on combining rules of a language and does not allow characters that do not meet the rules to be displayed. So while Sun may allow the user to enter a wrong character, he only does so upon notifying the user of the invalid sequence. See figure 6.

Applicants respectfully disagree. Following the teachings of Sun, a user may input a string of characters that, according to the combining rules of Sun, are part of a valid sequence, however, do not form a valid complex character according to the syntactical rules for that language. For example, a user may insert a following vowel into a string of characters from a group of allowable following vowels according to the combining rules of Sun, even though the chosen vowel is incorrect for the desired complex character. So, for instance, the combining rules of Sun might check to ensure that only a vowel or tone mark follow a leading consonant. If anything else is inputted following the leading consonant, Sun will signal an error or prompt the user for new input as indicated by step 606 of FIG. 6. However, the user may still input a vowel or tone mark that does not form a valid complex character according to syntactical rules of the language when combined with the other characters that were input. Therefore, a meaningless data structure will be generated. (See, Sun, column 3, lines 24-32.)

Proposed Amendment And Response Under 37 C.F.R. §1.116
Serial No. 09/345,195

Additionally, Applicants have argued, and continue to argue, that one of ordinary skill in the art would not have been motivated to combine the teachings of Sun and Hetherington to arrive at a method that comprises displaying the characters as they are input. Once again, Sun teaches away from the modification suggested by the Examiner. The method of Sun does not form correctly configured combinations of characters as a user inputs each character. In the method of Sun, the entire string of characters must be inserted first to determine whether the string of characters can form a foreign language character according to the combining rules of the foreign language. Then, a subsequent operation is necessary (i.e., header information) to assemble the string of characters into a data structure. Examiner Singh described Sun, stating on page 8, lines 11-15 of the November 22, 2003 Office Action:

If the character is a valid sequence, it places the character in a register and waits for the next character. It would have been obvious to one of ordinary skill in the art at the time of the invention to visually represent this process as it allows a user to see the characters that he is inputting into the system in conjunction with the additional characters.

The fault in the Examiner's analysis lies in the fact that even if Sun were to display characters as they are input, the display would be limited to showing the sequential string of characters as input by the user since the complex character of Sun is not formed until after a header is formed and the string of characters is assembled into a data structure. These steps occur after the sequence of characters is complete. The present invention as embodied in claim 14, for example, displays the **correctly configured** sequence of characters on a display screen after each character is input. FIGS. 10-12 illustrate this process through a series of example keyboard inputs and outputs. Through the process of the present invention, the user is able to visualize the complex character as it is being formed, allowing for early indication of an input error and opportunity to correct the error prior to further character input.

Applicants respectfully submit that a *prima facie* case of obviousness has not been made with regard to the rejection of independent claims 1, 14, 16, 17, 18, and 27 in view of the teachings of Sun in combination with Hetherington or Hetherington2. Since claims 2-5, 7-13, 15, 23-26, and 28-31 depend from independent claims 1, 14, 16, 17, 18, and 27, and recite

Proposed Amendment And Response Under 37 C.F.R. §1.116
Serial No. 09/345,195

additional claim features, Applicants respectfully submit that a *prima facie* case of obviousness has not been made with regard to the rejection of claims 2-5, 7-13, 15, 23-26, and 28-31 in view of the teachings of Sun in combination with Hetherington or Hetherington2. Accordingly, Applicants respectfully request withdrawal of this rejection.

II. Conclusion:

For at least the reasons given above, Applicants submit that claims 1-5, 7-18 and 23-31 define patentable subject matter. Accordingly, Applicants respectfully request allowance of these claims.

No additional fees are believed due; however, the Commissioner is hereby authorized to charge any deficiency, or credit any overpayment, to Deposit Account No. 13-2725.

Should the Examiner believe that anything further is necessary to place the application in better condition for allowance, the Examiner is respectfully requested to contact Applicants' representative at the telephone number listed below.

Respectfully submitted,
MERCHANT & GOULD, LLC

By: Leonard J. Hope
Reg. No. 44,774

MERCHANT & GOULD, LLC
3200 IDS Center
80 South 80th Street
Minneapolis, Minnesota 55402-2215
404/954-5038
Attorney No. 60103.0101US01
MS Docket No.: 131071.1